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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,099	10/22/2001	Kurt Nattermann	VO-542	7951

7590 06/04/2003

Pauley Petersen Kinne & Fejer
Suite 365
2800 West Higgins Road
Hoffman Estate, IL 60195

EXAMINER

LEURIG, SHARLENE L

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/889,099		NATTERMANN ET AL.	
	Examiner		Art Unit	
	Sharlene Leurig		2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>9</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites a coating that is “a film of a silicon, a polyurethane and a polymer material, selected from the group of ormoceres”. The specification recites a coating made of one of the three— either silicon, polyurethane, or a polymer material. For the purposes of examination, the claim will be interpreted as meaning the coating is of at least one of the three materials.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by De Jule (4,227,114) (of record). De Jule discloses a large-area radiator with front pane (Figure 6, element 100) and a rear element (98), wherein spacer elements (110, 114) keep the front pane apart from the rear element. A gaseous filler is introduced into a space between the front pane and the rear element (column 6, lines 11-12) and is at a lesser pressure than the pressure of the surrounding atmosphere, as evidenced by the need of the unit to be "self-supporting against atmospheric pressure" (column 14, lines 66-67). The front pane is made of a glass material that has been tempered, either chemically or thermally (column 6, lines 23-24).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Jule (4,227,114) (of record) in view of Aratani et al. (4,671,814) (of record). De Jule discloses a large-area radiator with a front pane made of tempered glass, as discussed above. De Jule lacks explicit disclosure of the softening point of the glass.

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Aratani teaches a thermal tempering of glass within a temperature range of 650 degrees Celsius or less, and preferably between 400 and 600 degrees Celsius, in order to prevent the glass from becoming distorted (column 6, lines 49-55). The claimed limitation of the glass viscosity being 13.6 dPas at a temperature of 550 degrees Celsius is simply a recitation of a softening point of the glass. Therefore if Aratani teaches the thermal tempering of the glass at a temperature below 650 degrees Celsius, and preferably between 400 and 600 degrees Celsius, in order to prevent distortion of the glass in order to prevent softening, the claimed limitation of 550 degrees Celsius or more falls into the range taught by Aratani.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the large-area radiator taught by De Jule with a tempered glass faceplate made of glass that reaches its softening point at a temperature of above 550 degrees Celsius, as taught by Aratani, since it has been found to be established in the art to use glass with the claimed softening point in making display devices.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Jule (4,227,114) (of record) in view of Aratani et al. (4,671,814) (of record) as applied to claim 2 above, and further in view of Suzuki et al. (5,296,294), and further in view of Kent et al. (WO 98/52184) (of record).

De Jule discloses a large-area radiator with front or rear panels made of tempered glass that is one-eighth inches thick or less, but lacks disclosure of how the glass is tempered. De Jule discloses the attractiveness of a low-weight display (column 17, lines 4-11).

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Aratani teaches a thermal tempering of glass within a temperature range of 650 degrees Celsius or less, and preferably between 400 and 600 degrees Celsius, in order to prevent the glass from becoming distorted (column 6, lines 49-55).

Both De Jule and Aratani lack glass that is specifically within the range of 1.5 to 2.1 mm.

Suzuki teaches glass forming a faceplate of a plasma display device that can be between 2- 3 mm (column 10, lines 43-44), which falls within the claimed range of 1.5- 2.1 mm thick, in order to lower the weight of the display device (column 1, lines 17-18).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify De Jule's large-area radiator with a glass substrate between 1.5 and 2.1 mm thick, as taught by Suzuki, in order to lower the weight.

Both De Jule and Suzuki lack disclosure of specifics of the thermal tempering treatment.

Kent teaches the general process of thermal tempering, which comprises heating and cooling glass to place it under high compression, resulting in fully tempered glass at 15,000 psi and partially tempered glass at 10,000 psi (page 11, lines 1-2). These values correspond to more than 60 MPa.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify De Jule's large-area radiator with glass having a softening point temperature as taught by Aratani, and further modifying it with glass of the thickness taught by Suzuki in order to lower the weight of the device and with glass

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tempered at greater than 60 MPa, as taught by Kent, since Kent teaches that the claimed range is standard in the thermal tempering art.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Jule (4,227,114) (of record) in view of Duke et al. (3,573,072). De Jule discloses a large-area radiator with front or rear panels made of tempered glass that is one -eighth inches thick or less, which falls into the claimed range of greater than 0.5 mm, but lacks disclosure of how the glass is tempered.

Duke teaches a glass material that is chemically tempered to values of more than 160 MPa (Table in column 8). 160 MPa is equivalent to 23,206 psi.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify De Jule's large-area radiator with chemically-tempered glass of more than 160 MPa, as taught by Duke, as it has been shown to be well-known in the art to create glass with such high surface tension.

7. Claim 5-8, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai et al. (EP 0 851 452 A2) (of record) in view of De Jule (4,227,114) (of record).

Regarding claim 5, Ochiai discloses a plasma display (a type of large-area radiator) having a front panel made of glass (page 2, line 46) with a coating of a ductile polymer material (page 5, lines 29-33). Any material that can be coated onto something can be referred to as ductile, since it is capable of being manipulated.

Regarding claim 6, Ochiai discloses a coating made of a material such as a polymer of polyurethane or of silicone (page 5, lines 34-38).

Regarding claims 7, 8 and 12, Ochiai discloses a coating with a thickness of more than 6 microns and less than 50 microns (page 5, lines 50-51).

Ochiai lacks disclosure of additional elements of the large-area radiator and additionally lacks disclosure of the glass being chemically or thermally tempered, but does disclose the need for treatments to the glass to improve its strength (page 5, lines 30-31).

It is well known to improve the strength of the glass in a visual display by tempering the glass.

De Jule teaches a large-area radiator having a front pane (Figure 6, element 100) and a rear element (98), wherein spacer elements (110, 114) keep the front pane apart from the rear element. A gaseous filler is introduced into a space between the front pane and the rear element (column 6, lines 11-12) and is at a lesser pressure than the pressure of the surrounding atmosphere, as evidenced by the need of the unit to be “self-supporting against atmospheric pressure” (column 14, lines 66- 67).

Regarding claim 14, the front pane is made of a glass material that has been tempered, either chemically or thermally (column 6, lines 23-24).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ochiai’s radiating display with the elements taught by De Jule since it is well known in the art for radiating display such as plasma displays to have the claimed elements, and to further modify it by chemically or thermally tempering the glass of one of the panes, in order to strengthen the glass, as taught by De Jule.

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8. Claims 9, 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai et al. (EP 0 851 452 A2) (of record) in view of De Jule (4,227,114) (of record) as applied to claims 5-8, 12 and 14 above, and further in view of Schmitt et al. (4,971,887).

Ochiai discloses a large-area radiator with all the limitations discussed above, but lacks disclosure of tempered glass and other components of the device.

De Jule teaches tempered glass as well as the components lacking in Ochiai.

Both Ochiai and De Jule lack disclosure of a primer.

It is well known in the art to deposit a primer on glass to improve the adhesion of a coating and the glass.

Schmitt teaches the use of a primer made of hexamethyl disilazane (column 7, lines 60-61) on a substrate made of a material such as glass (column 5, lines 19-21) in order to improve adhesion of the glass and a coating.

Therefore regarding claims 9 and 13, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ochiai's display with the components taught by De Jule and to further modify it with a primer made of hexamethyl disilazane in order to improve the adhesion of the coating to the glass, as taught by Schmitt.

Regarding claim 10, De Jule teaches glass that is tempered, either chemically or thermally (column 6, lines 23-24).

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Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ochiai's radiating display by chemically or thermally tempering the glass of one of the panes, in order to strengthen the glass, as taught by De Jule.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being un patentable over Ochiai et al. (EP 0 851 452 A2) (of record) in view of De Jule (4,227,114) (of record) and further in view of Schmitt et al. (4,971,887) as applied to claims 9, 10 and 13 above, and further in view of Hashimoto et al. (JP 2000-357463).

Ochiai discloses a radiating display with all the limitations discussed above, but lacks additional components of the display, which are taught by De Jule. Schmitt teaches a primer coating. Ochiai, De Jule and Schmitt lack spacers that are wavy.

Hashimoto teaches spacers that are wavy and are arranged between front and back panels of a display device, where wavy lines extend parallel with a planar extension of the front plane.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ochiai's display with the components taught by De Jule and with primer taught by Schmitt to make a functional display with strengthened glass, and to further modify it with wavy spacers, as it is known in the art to configure the spacers in such a pattern, as taught by Hashimoto.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ochiai et al. (EP 0 851 452 A2) (of record) in view of De Jule (4,227,114) (of record) as applied to claims 5-8, 12 and 14 above, and further in view of Hashimoto et al. (JP 2000-357463).

Ochiai discloses a radiating display with all the limitations discussed above, but lacks additional components of the display, which are taught by De Jule. Both Ochiai and De Jule lack spacers that are wavy.

Hashimoto teaches spacers that are wavy and are arranged between front and back panels of a display device, where wavy lines extend parallel with a planar extension of the front plane.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ochiai's display with the components taught by De Jule and to further modify it with wavy spacers, as it is known in the art to configure the spacers in such a pattern, as taught by Hashimoto.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Jule (4,227,114) (of record) in view of Suzuki et al. (5,296,294), and further in view of Kent et al. (WO 98/52184) (of record).

De Jule discloses a large-area radiator with front or rear panels made of tempered glass that is one-eighth inches thick or less, but lacks disclosure of how the glass is tempered and of glass that is specifically within the range of 1.5 to 2.1 mm. De Jule discloses the attractiveness of a low-weight display (column 17, lines 4-11).

Suzuki teaches glass forming a faceplate of a plasma display device that can be between 2- 3 mm (column 10, lines 43-44), which falls within the claimed range of 1.5- 2.1 mm thick, in order to lower the weight of the display device (column 1, lines 17-18).

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Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify De Jule's large-area radiator with a glass substrate between 1.5 and 2.1 mm thick, as taught by Suzuki, in order to lower the weight.

Both De Jule and Suzuki lack disclosure of specifics of the thermal tempering treatment.

Kent teaches the general process of thermal tempering, which comprises heating and cooling glass to place it under high compression, resulting in fully tempered glass at 15,000 psi and partially tempered glass at 10,000 psi (page 11, lines 1-2). These values correspond to more than 60 MPa.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify De Jule's large-area radiator with glass of the thickness taught by Suzuki in order to lower the weight of the device and with glass tempered at greater than 60 MPa, as taught by Kent, since Kent teaches that the claimed range is standard in the thermal tempering art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharlene Leurig whose telephone number is (703)305-4745. The examiner can normally be reached on Monday through Friday, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703)305-4794. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703)308-7382

for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Sharlene Leurig
May 27, 2003


ASHOK PATEL
PRIMARY EXAMINER